

CLAIMS

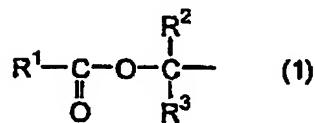
1 A photocurable resin composition comprising:

(A) a component comprising a carboxyl group that may dissociate in the presence of an acid,

(B) a cationically polymerizable compound, and

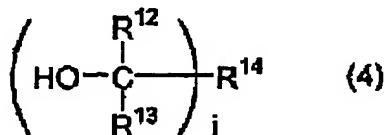
(C) a cationic photoinitiator.

2 The photocurable resin composition according to claim 1, wherein the component (A) comprises a compound (a1) having a structure of the following formula (1),



wherein R<sup>1</sup> represents an organic group having a polymerizable carbon-carbon double bond, and R<sup>2</sup> and R<sup>3</sup> individually represent an alkyl group having 1-10 carbon atoms or an aryl group having 6-14 carbon atoms.

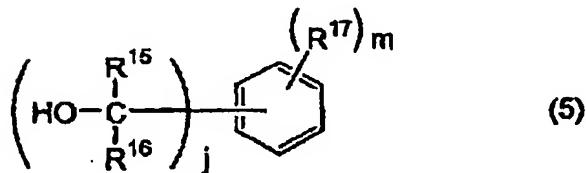
3 The photocurable resin composition according to claim 1 or 2, wherein the component (A) comprises a compound (a2) having the structure



wherein R<sup>12</sup> and R<sup>13</sup> individually represent an alkyl group having 1-10 carbon atoms or an aryl group having 6-14 carbon atoms, R<sup>14</sup> is an organic group with a valence of i, the R<sup>14</sup> group indicating a single bond when i is 2, and i is

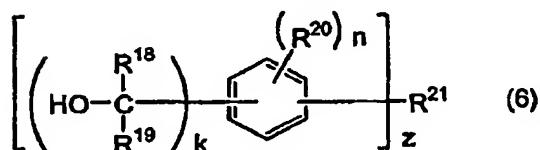
an integer of 2-4, provided that one of R<sup>12</sup>, R<sup>13</sup>, and R<sup>14</sup> is an alkyl group having 1-10 carbon atoms.

4 The photocurable resin composition according to anyone of claims 1-3, wherein the component (A) comprises a compound (a3) having the structure



5 wherein R<sup>15</sup> represents an alkyl group having 1-10 carbon atoms, R<sup>16</sup> represents an alkyl group having 1-10 carbon atoms or an aryl group having 6-14 carbon atoms, R<sup>17</sup> individually represents an alkyl group having 1-5 carbon atoms, j is an integer of 2-4, and m is an integer of 0-4, provided j + m ≤ 6.

5 The photocurable resin composition according to anyone of claims 1-4, wherein the component (A) comprises a compound (a4) having the structure

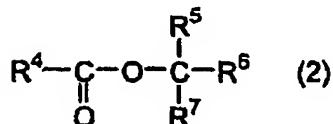


15 wherein R<sup>18</sup> represents an alkyl group having 1-10 carbon atoms, R<sup>19</sup> represents an alkyl group having 1-10 carbon atoms or an aryl group having 6-14 carbon atoms, R<sup>20</sup> individually represents an alkyl group having 1-5 carbon atoms, R<sup>21</sup> is an organic group having a valence of z, -O-, -S-, -CO-, or SO<sub>2</sub>, k is an integer of 1 or 2, n is an integer of 0-3, and z is an integer of 2-4.

20 6 The photocurable resin composition according to anyone of claims 1-5,

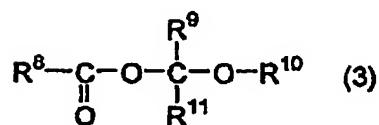
wherein the component (A) comprises 2,5-dimethylhexane-2,5-di(meth)acrylate or 1,3-di(2-hydroxypropyl)benzene-di(meth)acrylate.

7 The photocurable resin composition according to anyone of claims 1-6, wherein the component (A) comprises a compound (b1) having the structure



wherein, R<sup>4</sup> represents an organic group having a polymerizable carbon-carbon double bond, R<sup>5</sup> represents an alkyl group having 1-10 carbon atoms, and R<sup>6</sup> and R<sup>7</sup> represent an alkyl group having 1-10 carbon atoms, monovalent alicyclic group having 6-20 carbon atoms, or monovalent aryl group having 6-20 carbon atoms.

10 8 The photocurable resin composition according to anyone of claims 1-7, wherein the component (A) comprises a compound (b2) having the structure



15 wherein R<sup>8</sup> represents an organic group having a polymerizable carbon-carbon double bond, R<sup>9</sup> represents a hydrogen atom, alkyl group having 1-10 carbon atoms, alicyclic group having 3-10 carbon atoms, aryl group having 6-10 carbon atoms, or aralkyl group having 7-11 carbon atoms, R<sup>10</sup> and R<sup>11</sup> individually represent an alkyl group having 1-10 carbon atoms, haloalkyl group having 1-10 carbon atoms, alicyclic group having 3-10 carbon atoms, aryl group having 6-10 carbon atoms, or aralkyl group having 7-11 carbon atoms, or any two of R<sup>9</sup>, R<sup>10</sup>, and R<sup>11</sup> may bond to form a 5-7 member ring.

9        The photocurable resin composition according to anyone of claims 1-8, wherein the component (A) comprises a compound (c), which is a (co)polymer prepared from monomers comprising the compounds (a) and/or (b).

10      The photocurable resin composition according to claim 9, wherein the (co)polymer is prepared from monomers comprising 10-100 mol% of component (b).

5        The photocurable resin composition according to claim 9-10, wherein the polystyrene-reduced weight average molecular weight of the copolymer (c) determined by gel permeation chromatography (GPC) is 1,000-500,000

10      The photocurable resin composition according to anyone of claims 1-11, wherein the proportion of the component (A) used in the photocurable resin composition of the present invention is 1-50 wt%.

11      The photocurable resin composition according to anyone of claims 1-12, wherein the component (B) contains 50 wt% or more of epoxy compounds.

15      The photocurable resin composition according to anyone of claims 1-13, wherein the component (B) is present in an amount from 20-90 wt%.

15      The liquid photocurable resin composition according to anyone of claims 1-14, further comprising (D) elastomer particle having a number average particle diameter of 10 to 1,000 nm.

20      The liquid photocurable resin composition according to anyone of claims 1-15, further comprising (E) an ethylenically unsaturated monomer other than the component (A), and (F) a radical photoinitiator.

17      The liquid photocurable resin composition according to anyone of claims 1-16, further comprising (G) a polyether polyol compound having one or more hydroxyl groups in the molecule.

25      The liquid photocurable resin composition according to anyone of claims 1-17, further comprising (G) a polyether polyol compound having one or more hydroxyl groups in the molecule.

18      A photofabricated product obtained by curing the liquid photocurable resin

composition according to any one of claims 1-17 by applying light.

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